Causeway Across Lavaca Bay — *by Avery Johnson*

The HUMBLE WAY

MAY-JUNE, 1952

Youngsters of today—the citizens and leaders of tomorrow—learn at an early age that our Constitution begins with the significant words: "We, the People . . . ." Under the Constitution, the federal government was designed to be one of limited and delegated powers; all other powers being specifically reserved under the Tenth Amendment to the states and to the people, its creators.

The HUMBLE WAY
MAY-JUNE, 1952
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America's Greatest Asset

By HINES H. BAKER
President, Humble Oil & Refining Company

AMERICA stands at an anxious moment in its life. It faces grave dangers from without, the character and extent of which are locked in secrecy behind an iron curtain. A sinister power whose gods are materialism and conquest seems bent on destroying the way of life of peace-loving people the world over. Nation after nation has fallen victim to its subversive and ruthless power. It has involved us in a cruel undeclared war which has taken more American lives than all but our three major wars. And we know not where nor how this power may strike next.

But grave as are the dangers from without, America may face even greater perils from within; perils which threaten the destruction of the principles of life, government, and the social and economic organization on which America rose to greatness and her people to outstanding character and achievement.

We have been shocked by tremendous and tragic revelations into a sense of awareness of the dangers from without. But it seems clear that as a people we are not fully aware of the perils from within. Often we seem lost and bewildered by the swift succession of steps through which the government in the name of need or emergency has moved into the center of our lives. And we appear unable to understand the consequences of these developments.

There is some reason for this confusion. We appear at a peak of prosperity. We have built an incomparable agricultural and industrial economy. The productive capacity of our farms, mines, and industry is amazing. Our standards of living are high. Our people live in relative comfort when compared with other peoples. The means of transportation and communication make the world of goods and ideas readily accessible. Homes are provided with all manner of conveniences—electric lighting, bathtubs, refrigerators, washing machines, telephones, radios, phonographs, television.

The extent of our enjoyment of things is illustrated by these facts: Although the United States embraces only five per cent of the land area and has seven per cent of the population of the world, we use 77 per cent of the automobiles, 50 per cent of the radios, and 50 per cent of the rubber. We produce about half of all the world's oil, coal, electric power, and

An address delivered before the Natural Gasoline Association of America at Houston on May 1 and before a joint meeting of Rotary, Kiwanis, and Lions clubs at Baytown on May 22, 1952.

steel, which form the material basis of modern civilization.

Is this because we are unusually well endowed with natural resources? No; the reason is not here. Other areas are better supplied with natural resources. These are valuable only as man converts them to usable form.

The reason is not in abundant physical resources primarily, but rather in human resources at work. It lies in a dynamic force that has generated a spirit of initiative, an urge to create and produce, a will to achieve. This force has stimulated men to work, to explore, to discover, to develop improved technological methods, to reclaim desert and swamp, to build factories, to contrive conveniences, to build attractive homes, to improve their minds, and to carry forward the myriad activities that have brought us to the high standard of economic well-being we now enjoy.

This dynamic force is freedom—individual freedom. It is the right to be let alone; to be free from arbitrary interference. It is our right as individuals to speak our minds freely, to publish our thoughts, to worship as we please, to be free from unlawful seizures, to pursue a gainful occupation, to carry on a business enterprise, and to enjoy the fruits of our labors and enterprise through wages, profits, and the acquisition and use of private property.

Freedom is our greatest asset.

Our forefathers who founded this nation were men of rare vision and insight. They regarded the individual man as a spiritual being of supreme worth and dignity, the world as a rational place, and law as a set of principles deriving from natural justice. Freedom is a natural right from God; not something derived from government.

Nowhere is this philosophy set forth with greater eloquence than in this statement from the Declaration of Independence:

> "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are Life, Liberty, and the pursuit of Happiness. That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed."

In this view, governments are established to secure and preserve freedom, not to infringe upon or destroy it. A condition of freedom, therefore, is that it not be subject to invasion by arbitrary governmental authority. The founders in establishing the federal union under the Constitution wisely provided a system of checks and balances to preserve freedom. The federal government was one of limited and delegated powers; all other powers being specifically reserved under the Tenth Amendment to the states and to the people, its creators. And within the federal government itself three separate branches were established with limited functions: the legislative to enact laws, the judicial to interpret them, and the executive to execute or administer them. Each was a check upon the other.

The system was designed to enable the individual to develop his ultimate capacities under the protection of law. And it permitted an individual business to stand or fall upon the basis of its own resourcefulness, aggressiveness, and ability to be of service and endure in a competitive system.

Freedom is not license. It is not a permit to act without restraint of law or religion, rules or discipline. Freedom for one individual accords the same rights to another. It thus leads to order; not to chaos through "tooth and claw"; not to dictatorship by the strong and slavery to the weak.

Hence freedom is the dynamic, positive force that releases the powers of the individual personality for maximum achievement. This has brought us character as a people and strength as a nation. It is the foundation of our economic, social, and spiritual power. In freedom we find the reason for our high standard of living, for the variety of things we possess, for the high attainments in production, education, and culture.

Over against this concept of the paramount importance of the individual and his freedom, which has led to such marvelous achievements in this nation, there has been throughout recorded history a counter view and practice under which the individual is subservient to his rulers. Under the American concept, government is the servant of the individual, not his master, and derives its powers from the consent of the governed. Under the other concept, the state is master, and the individual has such rights only as the state accords him; he occupies varying stages of subservience down to abject slavery. Governments under this latter concept have taken varying forms—absolute monarchies, oligarchies, Fascism, Nazism, socialism, communism. In all these, individual freedom is impaired or destroyed. Dictatorship and freedom are incompatible. That is true whether it be expressed in a Hitler under Nazism in Germany, in a Stalin or Politburo under communism in Russia, or in the dictatorship of the proletariat under Marxian socialism. Witness the mass uprooting and movement of peoples from their homelands, the mass murders, the place of the Gestapo and the secret police, the plight of industry and religion under Hitler and Stalin. Also witness the socialization of private property and the means of production, the government controls, restraints, and burdens under which the individual has lived in socialist England. Fear replaces confidence; initiative and the incentive of effort are throttled in controls; and creativeness and productiveness are seriously lowered, coming not from an

inner urge to secure the fruits of effort but by the application of force from government.

The American people do not want such an economic order or system of government. It is contrary to their traditions and

manner of life. It contravenes every basic principle on which their success and happiness are based. It is the antithesis of the American way of life. Americans are individualists. They abhor dictatorship. They love freedom.

But Americans do want to get ahead. They have a strong desire for goods, for comforts, for pleasure, and for economic security. And they want them now.

The danger is that this desire, the impatience for immediate satisfaction of their wants, may lead them unwittingly into a surrender of freedom. The pursuit of a promised "security" may end up in subservience to an all-powerful state. The individual in America may well find the state no longer his servant but his master. And his standard of living, which has marked the American as the most fortunate person on earth, may well sink in the end to the low level existing in lands where dictators control the lives of people and socialism has slowed down the creative and productive forces at work.

This danger lies in the development of the federal government as a "welfare state"; the growth of the idea that the central government can and should supply our wants. It lies in the lure of "security" provided at the hands of Washington.

It is amazing how far down the road we have traveled already. And it is quite revealing to compare the steps taken in the last twenty years with the steps set forth as preliminaries to the final dictatorship of the proletariat in Karl Marx's *Communist Manifesto*. The extent of influence in government of those schooled in the Marxian philosophy can hardly be conceived until such a comparison is made. Time will not permit the parallels here; but I recommend it as a fruitful field of study.

The idea of supplying our wants by action of the central government takes many forms. It finds expression in government price supports for farm products, subsidies, cutting cedar and building water tanks on private farms and ranches, tax concessions to cooperatives, pressure upon industry for higher wages to employees, fixing minimum wages, school support and free school lunches, roads, waterway improvements, flood control projects, dams and power plants, jobs, hospitals and hospitalization, unemployment compensation and old age pensions. Many of these invade the normal field of private enterprise, voluntary private philanthropy, and the numerous activities and proper functions of local, state, and municipal governments.

In addition to the vast welfare projects at home, our government plans and finances stupendous programs of a similar nature in other countries.

This all results in the establishment of a vast bureaucracy to administer these programs and a whole army of government dependents. In 1949 one person in every 22 was a government employee, and one person in every 7 received money in one way or another from the government. The number must be greater today. It also results in the encroachment of government into land ownership and business. The government has acquired great quantities of land from private owners. It is operating power projects and selling power to the consumers with the use of tax money and is otherwise engaged in direct competition with business in financing private housing and in providing loans to industry. It is setting up cooperatives through tax preferences to compete with private industry, which bears an increasing tax burden.

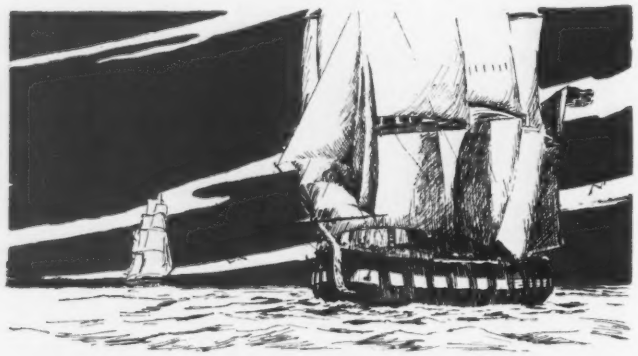
All these undertakings cost money. The shocking extent of public expenditures was revealed recently by Senator Byrd of Virginia when he disclosed the fact that in the seven years of the Truman administration, $262 billion had been collected from the taxpayers. This is more money than was collected in taxes during the administrations of all the thirty-one preceding presidents, including Roosevelt. This vast program of public spending has been financd by taxes and deficit spending. The graduated income tax has been a principal source of revenue. It has enabled the government to dip directly into the pockets of each individual, now involving tax rates graduated up to better than 90 per cent on individual incomes and to 52 per cent or more on corporate income. More than one-fourth of our national income is siphoned off in federal taxes.

The government by this spending and taxing has become the most profound influence in the individual's economic life. It competes with him, taxes him to support others, controls his wages and prices, tells the farmer what to plant and how much acreage to employ, allocates many of the products of industry among consumers, and is engaged in a world-wide program of economic planning affecting everything that goes on in industry.

All this involves a centralization of power and authority in Washington and a loss of function and importance in local, state, and municipal governments. To carry out such a huge program, the government has assumed heretofore unheard of powers and continues to grasp for others. The war powers have been abused by creating a continuing "emergency" during which war powers are exercised and all sorts of controls designed to effect the "welfare" program are carried forward. The power of Congress to regulate commerce, once confined to the objects of trade and communications across state lines, is now used to control strictly local activities. For example, under this, employees of indus-

tries engaged in purely local work are regulated and their wages established. The welfare clause of the Constitution has been invoked as authority for the exercise of powers not granted to the federal government.

Nor has the government been content to rely upon the broad interpretation of old powers. It has created new ones,



such as the doctrine of paramount right and authority used to justify seizure of portions of the continental shelf and the resources therein within state boundaries, recognized from the beginning of the nation to be the property of the states.

And most recently the President claims the "inherent" power and authority without the sanction of Congress to meet anything which he considers to be an emergency. Under this theory he assumes authority to seize the steel industry because of a labor dispute, to abrogate its contracts with employee representatives, and change its rates of pay; maybe even to require employees to join a union against their will. We read further of the President's claim of the right to take over the press and radio if in his judgment the public interest requires that this be done. Clearly if these steps can be taken, then no industry or business in the land is safe from seizure. Thus the central government, which under the Constitution was to be a government of limited power and delegated functions, would become a government of unlimited authority, the exercise and scope of which are determined by the men in power. The President need not act by authority of law but under "inherent" powers after the manner of the "divine right" of kings.

The encroachment of the federal government upon the rights of the states and of the people in violation of recognized constitutional limits upon federal power has been paralleled by a continuing encroachment of executive authority, its domination of the Congress and the courts, and the breakdown of basic checks and balances designed to stem the autocratic assumption of authority by the chief executive.

It is difficult to comprehend the extent of the step-by-step assumption and exercise of the power and functions by the central government and the total effect of the other moves by which our economy is planned and controlled by the government through its taxing and spending programs, and the total effect upon the people of the vast changes that are occurring. The way to socialism and indeed to communism is through a continued succession of similar steps. Hungary's top communist, Rakosi, recently described the "salami" tactics used to take over that country, "demanding a little more each day, like cutting up a salami, thin slice after thin slice." He explains:

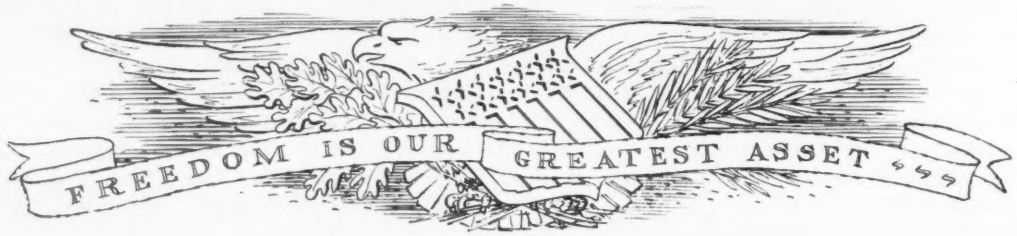
> "Take the banks for instance. First we requested only state control; later, the nationalization of only three big banks. In industry the same way: first we demanded state management of the mines; we gradually expanded this to the biggest machinery plants—and finally we shifted to nationalization."

In America we face a comparable danger. Each day the federal government demands a little more control over our lives—a thin slice here and there. If we continue to look to the government to satisfy our wants and encourage the growth of the "welfare" state, we will very soon find ourselves losing our freedom and its fruits as well. This is clearly stated by Somerset Maugham:

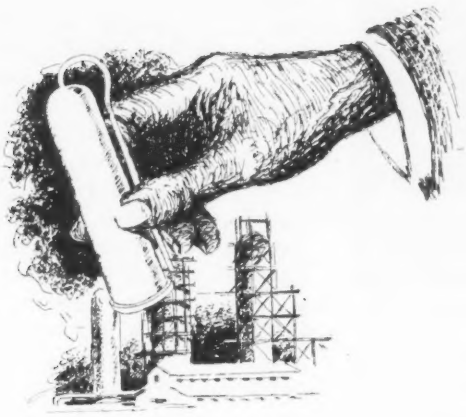
> "If a nation values anything more than freedom, it will lose its freedom; and the irony of it is that if it is comfort or money that it values more, it will lose that, too."

Let us remember that this country's freedom and the freedom of the individual citizen was won through suffering, bloodshed, and courageous sacrifice. It was hard to win. It can be easily lost. Once lost, it will be even more difficult to regain. Let us not pursue an illusory economic security through handouts from a "welfare" state, and end up its slaves.

We can preserve our freedom. But we must will to do so. We cannot remain complacent. We must fight for it. We must insist on respect for our rights under the Constitution. We must compel in government observance of the basic principles of the American way of life, not the least of which is integrity in government itself. We must stop the movement by which the individual with all his worth and value is submerged and ultimately swallowed up in a strong, all-powerful central government that plans the nation's economy, spends the earnings of the individuals on others, and finally controls his thinking, determines his day-by-day activity, and moves him as a pawn in its game. We are not yet slaves. We are free men. And under God's leadership we can rise to our full stature as such. I have confidence in America. We will find our way. We will have a spiritual rebirth; and in this, we will rediscover what our founding forefathers with rare insight and from bitter experience with a tyrannical government learned, and having learned, cherished; namely, that freedom is our greatest asset. And having rediscovered this fundamental fact in all its significance and meaning, we will have the courage and wisdom to preserve our freedom and move on to richer development of the individual and greater achievements as a people.



THE ENGINEER AND THE MODEL



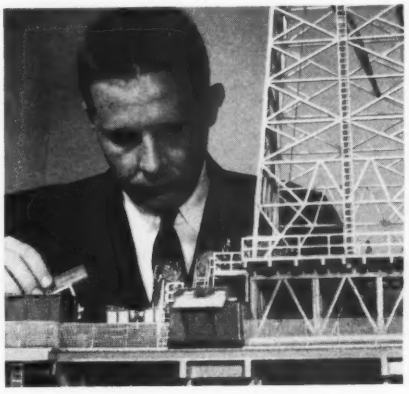
Miniature replicas that sometimes look like toys play an important part in progress of oil industry

Model ship with removable decks helped engineers plan conversion of war surplus LST's into tenders for offshore drilling.

SCALE models—those fascinating miniatures that look and sometimes operate like the real thing—have graduated from the home workshops of the hobbyists to become important tools in the technical laboratories of modern industry.

This is true especially of the oil industry, where midget size replicas are used for everything from determining the most efficient method of recovering oil from a reservoir to planning the best place to store oil drums in a warehouse. Humble's engineers and research technicians use many types of models for operational studies, planning, and demonstration purposes.

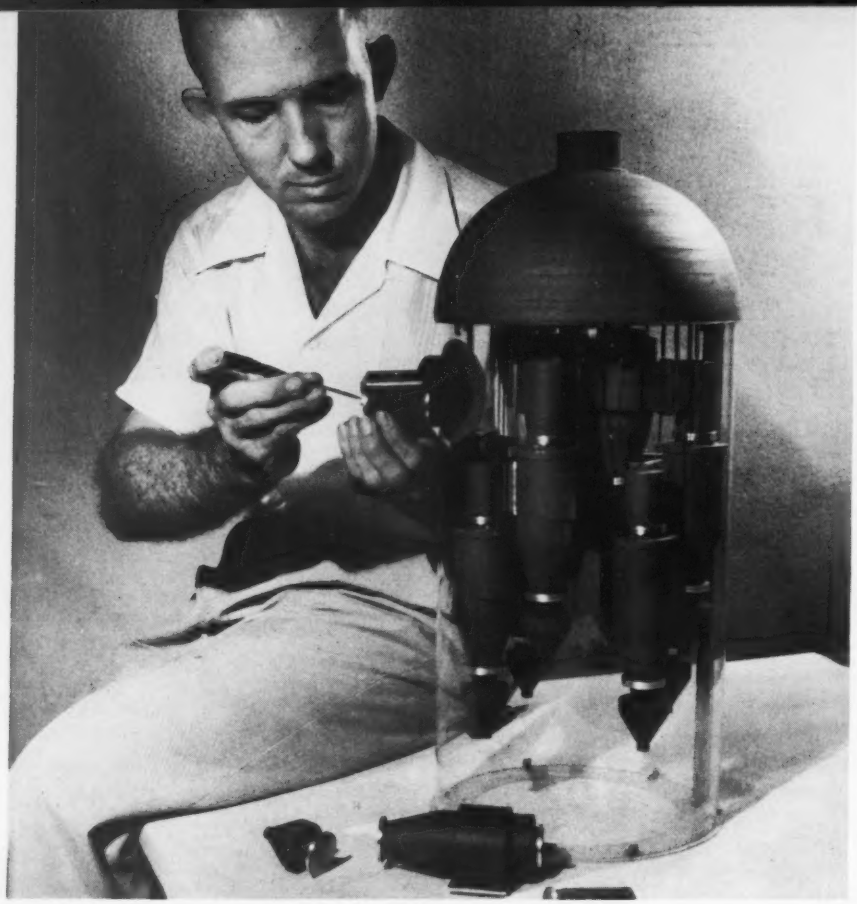
Some of these industrial models are so exact in design and construction that they duplicate the operation as well as the appearance of the original. A good example is the miniature jet rock bit with which production research engineers conduct tests in their laboratory. This drilling bit is so tiny that it fits into the palm of the hand, yet so accurately made that it drills a hole in rock exactly like a real bit drilling through a hard formation hundreds of feet below the earth's surface. Laboratory experiments with scale models have had an important part in development of improved drilling equipment.



Miniature offshore drilling platform is a companion piece to LST model above.

It is not always necessary for the engineer's model to look like the original, just so it produces the same action. Often in such cases, the engineers build their models out of transparent materials so they can actually observe operations that would be impossible to see in the original. In Humble's production research laboratory there is a model of a section of well casing with drill pipe inside. Constructed of clear lucite, the model is not easily recognizable for what it is. It has, however, provided an excellent means for the researchers to study the movement of mud and cuttings from the bottom of the "hole" up through the annulus—the space between drill pipe and casing.

Refining engineers at the Baytown Refinery also made good use of a trans-



To plan the best arrangement of cyclones inside a catalyst recovery vessel, refinery engineers used accurate scale model made of wood and clear plastic.

parent model recently in designing a new type of catalyst recovery assembly for a fluid catalyst cracking unit. The problem was to plan the arrangement of "cyclones" inside the massive steel vessel in such manner that they would have proper support, yet permit the removal of parts for maintenance purposes through a relatively small manhole on the side. In the scale model, the vessel was made of clear plastic and the "cyclones" were made of wood. Removable portions were held in place by dressmakers' snap fasteners. By experimenting with this scale model, the engineers were able to design the unit so as to eliminate some difficult maintenance problems.

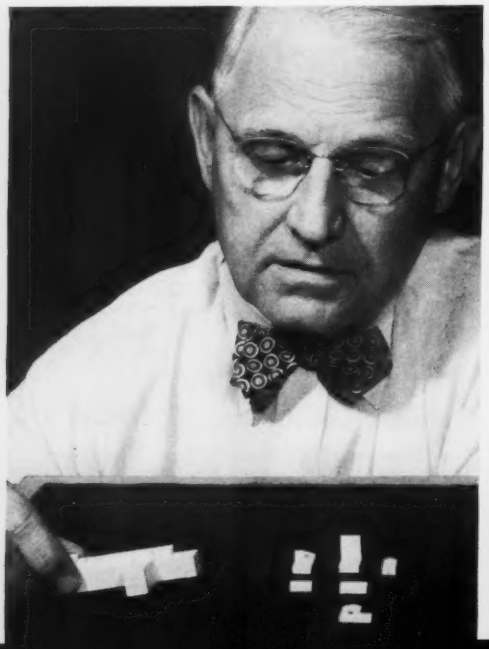
One of the most interesting of the petroleum engineer's scale models is the type used in reservoir studies to determine the best means of recovering the oil or gas trapped in its natural reservoir far beneath the earth's surface. Based on geologic data taken from the drilling logs of the wells in the field, the model duplicates, in greatly reduced scale, the contours and dimensions of the underground reservoir. By means of special analytical devices and highly technical computations, the engineers can tell where to inject dry gas or salt water into the reservoir to force out the maximum amount of oil or wet gas.

Although many of the scale models used in the oil industry are extremely technical and complex, some are as simple as a child's toy. For example, warehouse storage problems are sometimes worked out in miniature by use of small blocks of wood scaled and shaped to represent barrels and other items to be stored. By shifting these blocks about on a scale drawn floor plan of the building, warehousemen can work out the best allocation of space for storing each type of product.

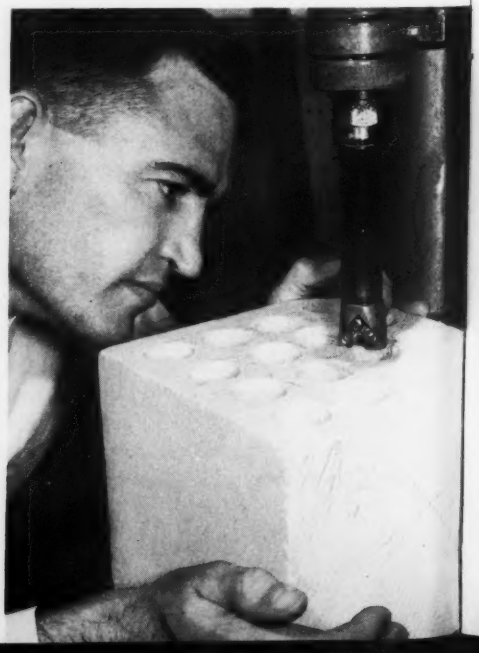
A little more complicated than the warehouse blocks are the scale models used by Sales Department engineers in studying new designs for service stations. Complete even to miniature gasoline pumps, the model shows exactly how the station will look when built. It is especially useful in demonstrating proposed major improvements or com-

Wrong way to lift an object is demonstrated by safety engineer using a wooden model with a spring for spine.

Miniature replicas of buildings in refinery research area helped in planning the location of Baytown's research laboratory.



Tiny rock bit, built to engineering precision and turned by drill press, drills hole exactly like a big bit.



plete new service station designs.

Probably the most complex non-operational scale models used for planning purposes by Humble engineers are those of a ship and offshore drilling platform. They were built several years ago after the Company had purchased several war surplus LST's with an idea of converting them into tenders for platform-mounted drilling rigs in the Gulf of Mexico.

In redesigning the ships for their new jobs, marine engineers needed the advice and suggestions of the drilling people who would actually use the equipment. But the men who knew drilling were not familiar with ships, nor were they accustomed to interpreting ship design drawings. To simplify the problem for all concerned, the marine engineers built an accurate scale model of the LST and the drilling platform it would serve. The superstructure and decks of the model ship were removable, so that the planners had visual access to every part of the vessel. The models played an important part in the conversion and subsequent successful operation of the LST's in offshore drilling.

If a picture is "worth a thousand words," a scale model must be worth ten times that to someone endeavoring to explain a complicated subject. Demonstration models of this type are widely used throughout the Company.

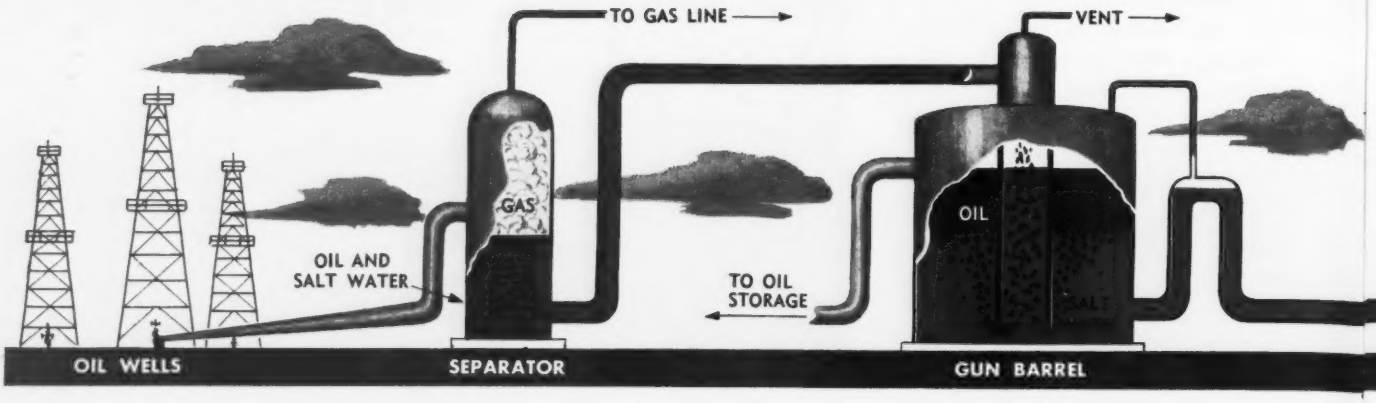
Safety engineers, for example, make frequent use of miniature models to emphasize the principles of safe practices and point out the causes of accidents. Safe driving discussions are especially effective when actual traffic situations are demonstrated by means of miniature vehicles and streets.

Exploration geologists, too, find a scale model extremely helpful in discussing the salt domes that are responsible for so many oil fields in the Gulf Coast region. This model is in the form of a three dimensional map on which every salt dome is duplicated in scale. The domes are accurate in shape, relative size and position. Anyone studying the map for a few minutes can comprehend the subject without difficulty.

Those are but a few of the many scale models that oil men use in their constant efforts to provide more and better oil products. These models are tiny by comparison, but their contribution to petroleum progress is often far out of proportion to their size.

Plaster scale model of underground natural reservoir is used by engineer to study flow of injected gas. Metal posts in fluid-filled model represent wells.

Traffic hazards are demonstrated by using model vehicles and street intersections. Below, tiny pumps complete this scale model of a new service station.



THE UNWELCOME GUEST

Salt water comes unwanted and unbidden to the surface in many oil wells. Disposing of it is a complicated, expensive business

ALL that comes up in an oil well is not oil. Useless and even harmful materials jostle oil for elbow room and try to crowd it out completely as they hitch a ride to the surface.

Perhaps the most unwelcome of these elevator pests is salt water. Certainly more of it gets a free ride from reservoir to wellhead than any other unwanted and uninvited guests. Disposing of the pesky stuff is a complicated and expensive problem for Humble and other producers—a problem that gets more expensive all the time as wells produce more water and less oil.

Last year, Company wells produced 127 million barrels of oil. Coming up with that oil, paying no fare and finding "No Sale" signs posted for it at every wellhead, was 180 million barrels of salt water. Every year, the volume to be disposed of is greater than the year before.

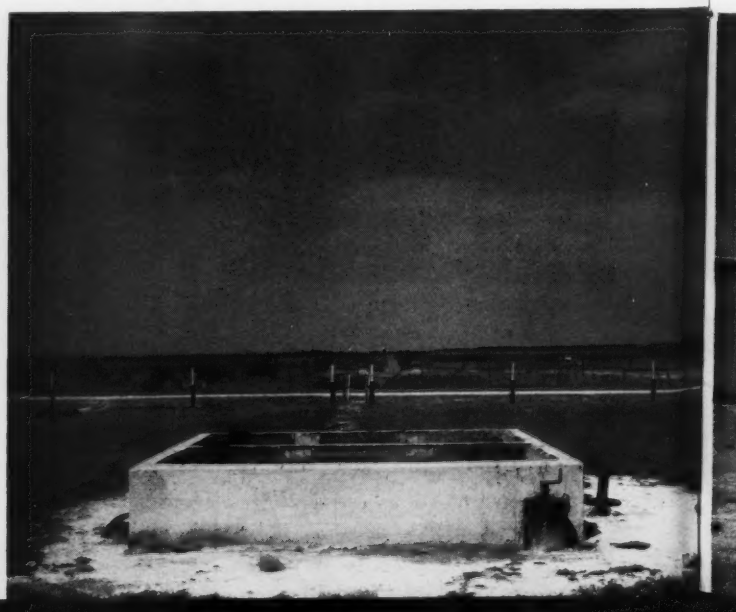
To handle increasing volumes of salt water, Humble has invested over a period of 11 or 12 years some $6 million in disposal facilities. Operating these facilities costs money, too. Last year, Humble spent more than a million dollars getting rid of a well-product that couldn't be sold for a plugged nickel.

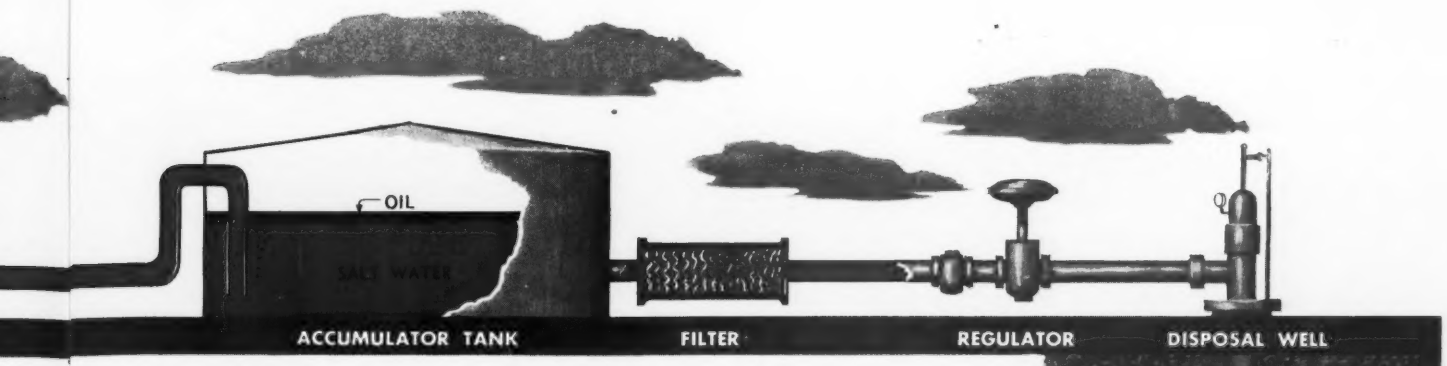
It would be bad enough if salt water could be disposed of quickly and without ceremony—just as an unwelcome guest may be removed from a party. But the task isn't that simple or that easy. Salt water is the kind of ejected guest that tears up shrubbery on the way out, in sheer spite.

Humble takes care that salt water produced from its wells is turned where it can do no mischief. Small amounts can be evaporated from open pits. Near the coast, it can be collected,

Salt water disposal system in the Friendswood oil field is neatly efficient. Skimmed oil goes to two tanks at the left.

Grass grows right up to salt water troughs. Water is sent under the road, emerges in background in ditch to tidewater.





turned into a fenced ditch or through a pipe line, and hustled off to tidewater. About 60 per cent of Humble's salt water is issued a return-trip ticket through injection wells.

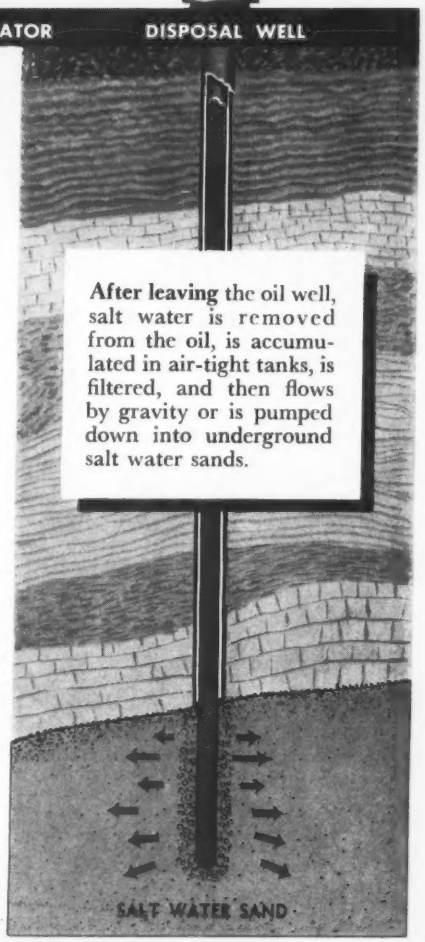
An injection well is exactly what the term implies. Through it, salt water is injected back into some salt water formation far below the surface. If the formation will not take water by gravity flow, the water has to be pumped down through the well and out into the formation. Most such wells take several thousand barrels of water a day.

Before the water is ready for repatriation, any oil it may contain is removed. In the "open type" system, a thin surface film of oil is skimmed off through slotted pipes placed at just the proper level in collection tanks. From here, water goes to a settling pond.

The "closed type" of disposal system prevents air from touching the salt water and forming solids that would collect in vessels and clog pipes. Salt water from several wells is piped to a closed metal tank with an oil seal on top of the water in the tank. This air-tight seal grows thicker as oil mixed with incoming water rises to the top and oil-free water is drawn from the tank's bottom.

From either the open or closed type system, salt water may flow by ditch or pipe to tidewater, or by pipe to an injection well. Now and then, a flow line or an injection well gets clogged and has to be cleaned out.

All of this sounds like—and is—a complicated and expensive business, just to get rid of useless salt water. But wherever salt water is produced with oil, Humble will provide means to control this unwelcome guest and place it where it can do no harm. It is neither cheap nor easy to dispose of 180 million barrels of salt water a year. Humble believes, however, that in this case the ends justify whatever means are necessary.


After leaving the oil well, salt water is removed from the oil, is accumulated in air-tight tanks, is filtered, and then flows by gravity or is pumped down into underground salt water sands.
SALT WATER SAND

Closed type disposal system in the Conroe oil field shows all parts reproduced in art at top of this page. Disposal well at right was first drilled to kill a gas blowout.

Humble salesmen in service stations all over Texas greeted new friends and made new customers during week of May 23-30.

SEVEN-DAY OPEN HOUSE

Warm smiles, extra service, and favors for all mark Welcome Week program on Humble driveways

IT WAS Welcome Week in Texas May 23-30.

At Humble stations all over the state thousands of motorists were given a warm welcome—with an extra big smile, with extra good service, with favors for all the family.

Preparations for Humble's Welcome Week had been underway for months. A complete station decoration and dealer cooperation program had been developed and set in motion. Newspaper, radio, poster board, and television advertising had been created to support the program. And station operators had mailed more than a quarter million welcome letters to Texas car owners announcing Welcome Week.

Results? Very satisfactory. All-time high records in gasoline volume were set in each of the four Sales divisions. From all corners of the state agents and dealers reported favorable acceptance.

"The finest program we've ever had . . . gave me a chance to talk with many people and get better acquainted," a West Texas agent reported.

"Helped me reach those people I didn't have a chance to meet on opening day," said a dealer in Southeastern New Mexico.

"Business was up 35 per cent on the week-end," an Austin operator said.

Many station operators tied in with the Welcome Week program in their own way to add an extra measure of friendliness and showmanship. Free coffee and cold drinks were served at many stations; one operator staged a free barbecue for his customers; another sponsored a local "smile week," offering a prize to the customer who, in the estimation of three judges, came in during Welcome Week wearing the biggest smile.

In a number of communities the Welcome Week promotion captured the imaginations of radio and newspaper men. A number of local feature stories were printed and in several communities agents were interviewed on local newscasts.

Regular customers and transients came into Humble stations during the week to inquire about Welcome Week or to comment favorably on it. One Houston agent reports a traveler who had driven all night being so impressed with the offer of a cup of early morning coffee that he said: "I do a lot of traveling; nothing like this has ever happened to me."

The reaction of Humble station operators almost universally was that the program has helped to make many new friends.

In an effort to spread its effectiveness over the summer months, it is being followed by the current "Welcome Traveler" program. Emphasis is on helpful travel information, extra clean rest rooms, and extra good service. With this program alert Humble operators are capitalizing on the momentum gained during Welcome Week to provide unexcelled service to the thousands of tourists coming to Texas this year.

Night picnic for the family is a delightful way to end a day on the beach. While the bonfire crackles cheerily, appetites already keen from an afternoon's play are honed to a razor's edge by delicious aromas of roasting wienies or broiling hamburgers.

The Gulf Coast... A Summer Playground

IT'S that time of year again, and the whole family knows it.

Mother, after a thankless job of cleaning house, sighs wearily and decides it's about time for a rest and a change of scene. Dad, away at the office, arrives independently at the same conclusion. Distracted by the magnetic pull of the season, he gazes yearningly out the window, dreaming of tackle boxes and prize trout. With school closed, the youngsters are more restless than ever.

All are afflicted with an old malady that comes early on the Gulf Coast. Call it what you will—*vernal hyperpyrexia*, or just plain spring fever—none of the antibiotics can touch it. For the stricken, there is one prescription: get out under the blue sky on a sandy beach! By early June, patients from Key West to Brownsville are taking the annual cure.

Whether you've got a full-sized vacation to spend, or just came down for a week-end jaunt, you'll find plenty to do on the Gulf Coast. The rugged and bronzed type, who spurn sunburn lotions and broad-brimmed hats, spend their time fishing, swimming, and sailing.

For less energetic gentry, who like to take at least part of their fun sitting down, there's the salt-sprayed joy of a cruise in the rolling Gulf, or a night picnic on the smooth beach, with bonfires blazing and the mouth-watering aromas of broiled hamburgers in the air.

For inquisitive children of all ages, there's pride of discovery in adding a new kind of sea-shell to the growing collection. And when the shell game palls, you can always cool off by wading in the edge of the restless surf.

For the incurable romantic who's read too many pirate stories, there's always the chance that the old map found last fall in a sidestreet bookstore may really pay off. This is the fellow who lets out a blood-curdling squawk every time his

Fishing in the Gulf of Mexico

by Avery Johnson

Tom Sawyers and Huck Finns along the Gulf Coast do their first fishing in creeks and bayous that line the coast country. From perch and catfish, they graduate to the big time and accompany Dad into the Gulf after speckled trout, redfish, and mackerel.

wife asks him to spade the garden, but he will dig for hours on end in the beach sand, ever hoping to turn up a Spanish doubloon or a few pieces-of-eight.

And for the "artist in every family," nothing is so stimulating as a stroll up the beach in search of some exotic bit of driftwood from Yucatan. Of such stuff are lampstands made!

Fishing, of course, leads all popularity contests among Gulf Coast sports. Possibly that's because there is a kind of fishing to fit every inclination and pocketbook. You can spend a small fortune on tackle and equipment and, for good measure, throw in a cabin cruiser that will take you far out into the Gulf where the big fellows lurk. Any number of fishing banks yield red snapper, kings, and such like. And on the way you can troll a bit for mackerel, those magnificent fork-tails, or try for that torpedo-shaped speedster, the bonita.

But if you can't go first class, don't fret. Plenty of fish ply shallows nearer the shore. Equip yourself more modestly, and try your luck in the surf or out on one of the piers or jetties that are standard equipment at every Gulf resort. If you're lucky—and you have to be, to catch fish anywhere—you'll pull in a few reds or a respectable string of tasty speckled trout.

If you're one of those escapists who fish purely for relaxation, spend a dollar or so on a pole and line, and hope the fish *don't* bite. Even with such schoolboy equipment, results along the coast can often be surprisingly good. You may be in for more work than you wanted.

But however you spend a Gulf Coast vacation, coming home always fits into a familiar pattern. Then is the time to reflect that fish are fun to catch, but hard work to clean and ice down until they can be safely stowed in the family deep-freeze. Sand does its abrasive dirty-work everywhere, and is not nearly so attractive as it was on the beach, where it belongs. Sunburns, mosquito bites, fingers cut on shells, and other mementos of the trip keep everyone a bit testy.

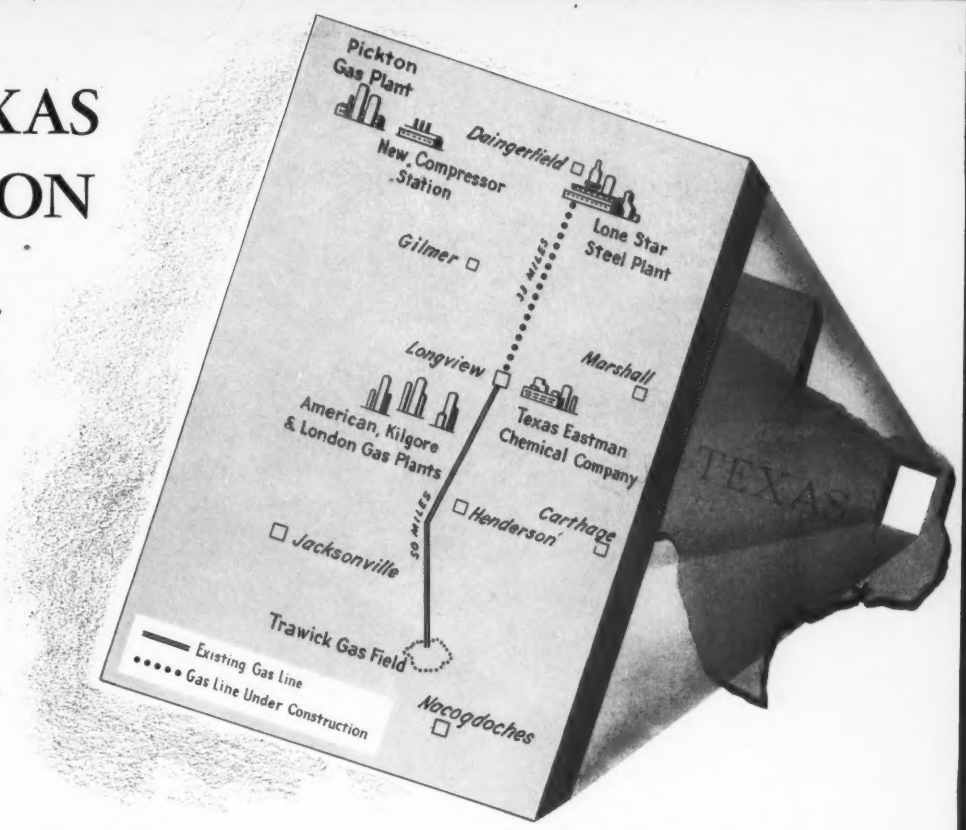
But there are good points to offset these minor vexations. Even if the creel is bare, and the treasure map that seemed like a sure thing ended as a dud, you limbered up muscles that hadn't been used for months. And you got air down into some parts of your lungs where no air had gone for a long time.

What if the back end of the car *is* full of shells? Junior will forget about them in a few days, and they can be smuggled out in the trash. What if you *did* lose a few forks and spoons on the beach? They were only dime-store specials, bought for the occasion. And remember, you lost a big set of cares and worries, too.

Yes, it's been a grand vacation. Now it'll be easier to get back to the job. If you come in late and empty-handed, just circle by the fish market and pick up a couple of trout for dinner. Like the man at the fishing camp said, you "just missed" the good fishing weather. It was perfect—the week before!

EAST TEXAS GAS EXPANSION

New projects will provide more fuel for industry and foster conservation



ACROSS the wooded hills of East Texas a new natural gas pipeline is snaking north toward a rendezvous with the furnaces of a steel plant. In the same area, only a whoop and a holler away, a new compressor station and other gas processing facilities have jumped from the drawing board into the foundation-laying stage.

These two projects are part of Humble's gas expansion program in East Texas. One, the new pipeline, will provide more fuel for industry—in this case, the plants of Lone Star Steel Company. The other, an addition to conservation facilities in the Pickton Field, will help maintain reservoir pressures and thus boost ultimate recovery of oil.

The pipeline is a 33-mile extension of Humble's Trawick Gas System, which currently carries gas from Trawick Field, in upper Nacogdoches County, to Texas Eastman Company's chemical plant near Longview. Now nearing completion, the new section will pipe gas to the steel plants at Lone Star in Morris County.

The new Pickton Field installation is another step in Humble's $40,000,000 postwar program for putting casinghead gas to productive use. Spotted four miles east of the Company's Pickton Gas Plant, the new facilities will be capable of processing an additional 30.6 million cubic feet of gas each day and injecting 28 million cubic feet back into the ground.

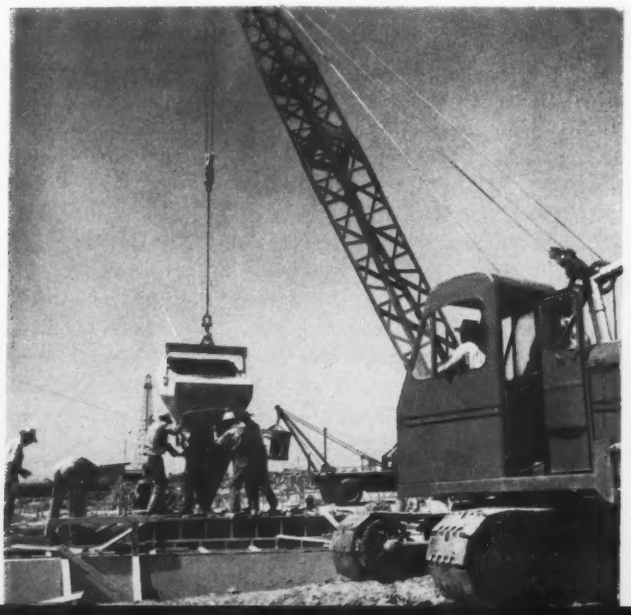
Pickton Field, which straddles parts of Hopkins and Franklin counties, has hitherto relied on the existing Gas Plant for its pressure maintenance. In recent years, however, the field has more than doubled in size. The new compressor station will serve the more recently developed areas.

An absorber at the new station will process the gas. Usable hydrocarbons in the casinghead gas will be soaked up with "lean oil," sent back to the Gas Plant, and there converted into gasoline, butane, and propane. The remaining dry gas will be compressed and pumped back into the oil reservoir to maintain field pressures.

In the field as a whole, this plan of pressure maintenance is expected to hike ultimate recovery of oil by an estimated 85 per cent.

Steady hands keep pipe from swaying while welders work in the background. This coated pipe will rest in a reservoir bed.

Crane guides load of fresh concrete into place over foundation forms of Company's new compressor station in Pickton Field.



These amazing JETS!

The new eight-jet sweptwing YB-60 is shown undergoing flight tests. The all-jet heavy bomber, described as a super B-36, is the first of two such experimental aircraft ordered by the U. S. Air Force last year. It flew for the first time on April 18.

In the last ten years, jet engines have wrought the greatest change in air transportation since the Wright brothers flew at Kitty Hawk

SEND a skyrocket whooshing up into a Fourth-of-July sky, trailing a shower of sparks behind it. Or inflate a toy balloon almost to the bursting point, release it suddenly, and watch it spurt crazily around the back yard. You are looking at jet propulsion in action.

Both the skyrocket and the toy balloon surge forward in response to released gases thrusting at the air behind them. As the scientists couch it in more technical terms, "for every action there is a reaction." In these cases, the *forward* movement of the skyrocket and balloon is caused by the reaction of gases thrusting *backward* at high velocity.

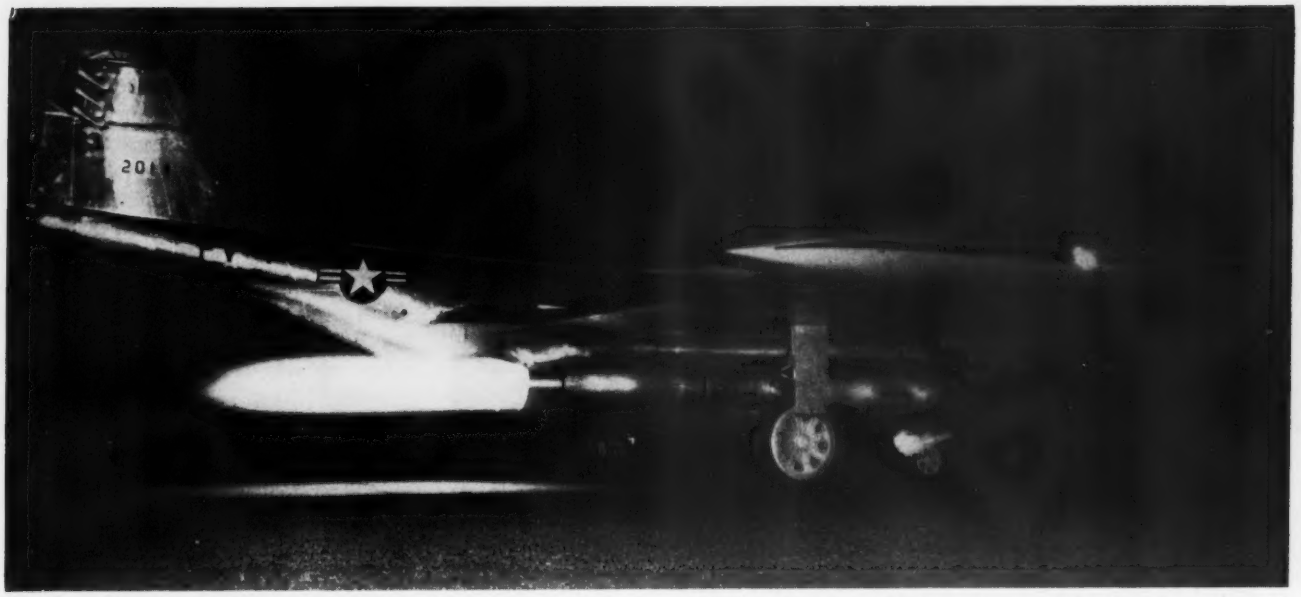
Jet engines which have revolutionized the conditions and character of today's aerial flight operate on much the same principle as the hurtling skyrocket and the spurting balloon. Compared with the more complicated piston-type reciprocating aircraft engines, they are relatively simple in design and operation. With fewer moving parts to worry about, their maintenance is simpler, too.

The jet engine first gulps in huge quantities of air from the atmosphere as the plane glides along, compresses that air, and mixes it with fuel. In a combustion chamber which is really nothing more than a burner compartment, the air-fuel mixture is ignited by spark plugs. Gases from the burning mixture expand violently and with great force, applying powerful thrust rearward as they escape at high velocity through the jet tailpipe. In passing, the gases serve another purpose by driving a turbine which supplies power for the fuel, air, and ignition system.

One of the first problems to be solved in jet flight was to find a metal that would stand up under the terrific heat (1600 degrees up) directed against the turbine blades by the blistering gases. In early development stages, the blades melted or were warped out of shape by the inferno that blasted by them.

Jet engines as weapons of war made their debut in the skies over Europe toward the close of World War II, when the Germans tried them on some of their Messerschmidt fighter planes. Meanwhile the Allies were digging frenziedly away at their own jet development. Across the Channel in England, work on jet aircraft engines had gone forward for a long time before the war broke out.

Air Commodore Whittle, of the Royal Air Force, had taken out patents on a gas turbine-jet drive arrangement



Northrop Scorpion F-89 blasts a stream of fire from its twin-jet afterburners. Afterburners give the Scorpion added power, enable it to get upstairs in a hurry. The plane is in the 600 miles an hour class, is equipped for around-the-clock flying.

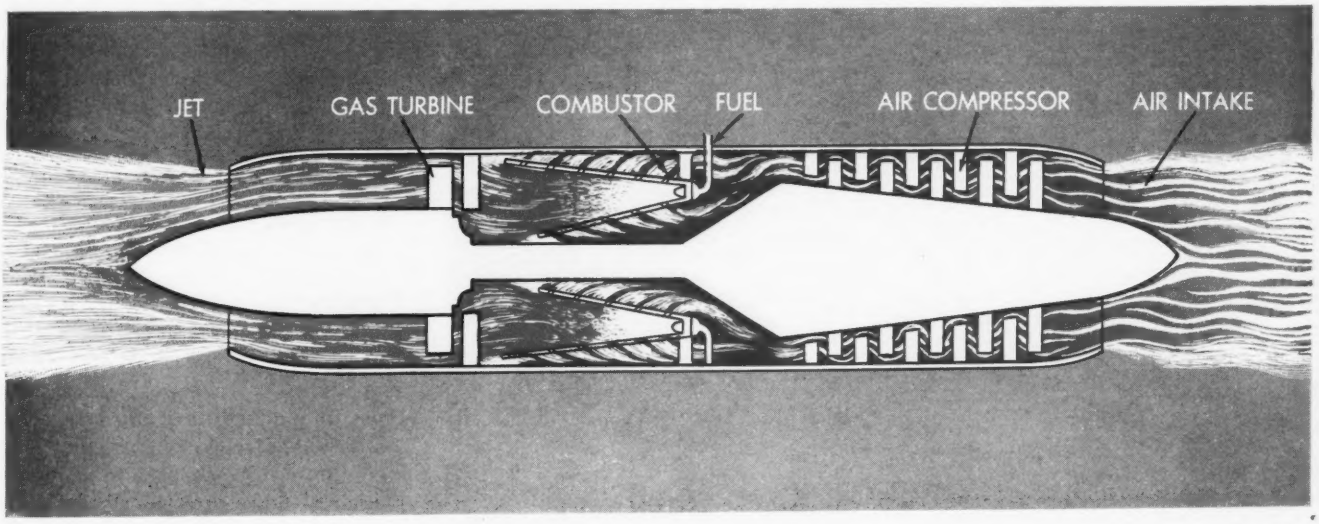
in 1930. His design first ran successfully seven years later, and in 1941 was used to power the successful experimental flights of a small jet monoplane. Only a year later, with American and British scientists and engineers cooperating, a Bell-designed combat plane powered with the Whittle-type engine took off on the maiden jet flight in the United States. Those who flew the plane praised its "smoothness, simplicity and evenness of power."

Since those first experiments, development of jet engines and jet-powered aircraft has gone on apace. And in the brief course of a decade, jet engines have brought about the greatest change in transportation since the Wright brothers launched their first flight at Kitty Hawk.

Jet planes are destined to rule as kings of the airways, and with good reason. Most important is their blazing speed. Jet flight has already cracked the so-called "Sonic Barrier"—that is, jet planes have flown faster than the speed of sound (761 miles an hour at sea level, decreasing with altitude). Right now, many jets cruise at 600 miles an hour and can go much faster.

Important, from a military standpoint, is the high altitudes at which jet planes can operate. In fact, jet engines *must* operate at least 35,000 feet up before they begin to develop best efficiency. The thinner the air, the better jets like it. They would do their best work in a complete vacuum, if it were possible for planes to carry their oxygen in a vacuum! Up and up still farther go the jets, piercing into the thin air of the stratosphere, where the propellers of a conventional-type engine would find little air to bite. Thirty-five thousand feet—40,000—50,000—and still the ceiling beckons. A recent front-page news story carried an account of a jet plane flying up to 79,000 feet—

Schematic drawing shows how jet engine works. Air comes in at right, is compressed, mixed with fuel, and fired in a combustion chamber. Gases expand rearward, working turbine and applying powerful thrust as they escape through tailpipe.



The Northrop X-4, a research plane being used in extensive flight tests, is one of the smallest ever built for USAF. Its wings measure about 25 feet from tip to tip.

almost 15 miles high! There seems to be almost no limit to what these amazing jets can do.

Inside a jet plane in flight, pilot and passengers live in a strange world. It has been described as sitting by oneself in a deserted library. No sound can be heard, except perhaps the ticking of one's watch held close to the ear, for outside the craft the speed of sound has been exceeded. There is no movement to break the tranquility, for a jet is almost vibrationless. It is a bit eerie, but it must be relaxing, too.

High altitude flight and high speed of jet planes bring up new problems of keeping cockpit temperature and pressure satisfactory for the pilot. He wears an air-conditioned and pressurized suit, to keep him comfortable and prevent "blacking out," or losing consciousness when he pulls out of dives and sudden turns. His oxygen mask gives him enough air at any altitude. His cockpit is pressurized, to keep the water and blood in his body from boiling at 55,000 feet or so. Should he suddenly lose his cockpit pressure at such heights, he must scramble hurriedly for lower altitude, or he might literally "blow up," as if from an explosion.

The pilot finds flying and maneuvering a jet much different from a conventional propeller-driven plane. It is a bit sluggish on takeoff, because jet engines deliver only a portion of their full thrust until a high altitude has been reached. The pilot, once aloft, needs more room to turn in, has to make quicker decisions, must identify his target faster and be quicker to fire at it. His dives are so fast that he needs diving brakes—but he must use them cautiously, or it would be like jamming on the brakes of an automobile going 70!

Instead of making a slow, deliberate approach to a landing field, he may have to begin his landing approach from as far as 100 miles out, and needs a much longer-than-usual landing strip after his wheels touch ground. Even seasoned flyers ruefully admit they "have to learn to fly all over again" to master these amazing jets.

Installed on a plane, the jet engine is light in proportion to the terrific power it delivers. It may weigh only about a fourth as much as a piston-type reciprocating engine capable of delivering the same power. But that is an advantage partially offset by the jet's prodigious appetite for fuel. To do the same job, a jet engine burns about twice as much fuel as conventional reciprocating engines.

The matter of mileage is something else. To get the most mileage out of his plane, the pilot of a piston-type engine has to fly at a fairly low speed, just as does the driver of an automobile. Not so with the jet pilot. He gets his greatest mileage when he flies at close to full engine power at the highest possible altitude. When he throttles his engine back, his fuel consumption increases, his speed decreases, and his mileage falls off.

For a long time, the fuel most used in jet engines was kerosene. Fuel in the kerosene range burns well in a jet engine, is easier to make and costs less than aviation gasoline, and is relatively safe to handle.

At first, the jet fuel specified by the military was known as JP-1. It was, and still is, a premium jet fuel. There was only one drawback: JP-1 is the heart cut of kerosene, and not much of it can be made from a barrel of crude oil. The military, looking to the future and wishing to be prepared for any emergency, was concerned about the matter of supply. They took their problem to the refining industry.

Could large volumes of jet fuel be refined to meet any need? That was the question military men asked refiners. Yes, was the reply, but specifications would have to be changed to allow inclusion of other petroleum "cuts" be-

The Scorpion F-89 in flight, with a lethal cluster of five-inch rockets tucked under its wings. The plane can use its powerful "sting" for combat ground support.

sides kerosene, which accounts for only 8 to 10 per cent of a barrel of crude oil.

The military pondered that answer, and decided it could sacrifice some of the premium characteristics of JP-1. They insisted, however, that two specifications must be rigidly met in *any* jet fuel: First, it must not freeze at 76 degrees *below* zero and must remain free-flowing and pumpable. Second, it must not flash, or ignite, below 100 degrees. The first was to insure engine operation at sub-zero temperatures in Arctic areas and in the stratosphere; the second was to make the fuel safer to handle on the ground.

As a result of study and cooperation between refiners and the military, a new fuel was born, known as JP-3. This new fuel was neither kerosene nor gasoline, but a combination of both. Making it turned out to be a refining and blending job that took virtually the "middle" out of a barrel of oil—all but the lightest and heaviest parts of the entire range of kerosene-gasoline-Diesel fuel. By these specifications, the refining industry could convert just about half a barrel of crude oil into jet fuel—a comforting possibility, should full-scale war come! The oil industry had again proved itself; in another emergency, it can deliver jet fuel in almost any required volume to keep our fighters and bombers aloft.

But what about peace? Commercial aviation is having its fling at jet flight, too. The British have just placed in regular airline service a DeHaviland *Comet,* jet-powered, for luxury transportation between England, Africa, and India. Only a few weeks ago, newspapers carried an account of members of the royal family taking a "joy-ride" around Europe in the *Comet* on a Sunday afternoon.

It may be some time yet before jet airliners go swishing around the United States. Ways are being worked on to cut down fuel consumption. Studies are also being made to reduce landing and takeoff speeds, to allow use of existing airfields or require minimum alteration to handle jet planes.

But one thing seems certain. These amazing jets are coming, and coming fast—to satisfy the American traveler's exacting demand for even more speed and comfort in the field of luxury transportation.

JETS ARE NOTHING NEW

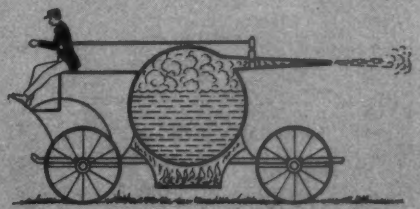
THE principle of jet propulsion is another example of "nothing new under the sun." Recognition of it dates back, almost literally, to the Year One. About the beginning of the Christian era, a crude form of jet engine was built by Heron of Alexandria, a Greek mathematician. Heron called his machine an *aeolipile,* for Aeolus, god of the winds.

Jet engine built by Heron.

The aeolipile was a hollow sphere, mounted to rotate between two pillars. One pillar was hollow and transmitted to the sphere steam generated from a closed vessel mounted over a fire. Two pipes with right-angle ejecting nozzles were attached to the sphere on opposite sides. The reaction caused by steam escaping through the two nozzles made the sphere revolve.

It was nearly 17 centuries later that Sir Isaac Newton explained this phenomenon by declaring, in his third law of motion, that "action and reaction are equal in magnitude and opposite in direction." Thus, the aeolipile revolved (and jet airplanes fly) as an action caused by a reaction—a forward movement in response to a backward thrust.

With more industrial drive and enterprise, 18th century Europeans might have had the pleasure of touring the countryside in jet-propelled automobiles. A sketch of one such vehicle was proposed in a number of textbooks of that age and called, rather loosely, "Newton's steam carriage." The sketch showed a spherical boiler mounted over a fire in the center of a four-wheeled carriage. At the top of the boiler was a steam nozzle, or jet, directed rearward. Steam escaping back through the nozzle was supposed to move the carriage forward. The driver could control speed by regulating with a valve the amount of steam released. Somehow, the idea never quite panned out, and the fate of the horse was secure for at least another two centuries.



Sir Isaac Newton's steam carriage.

Soldiers of Genghis Khan firing rockets into besieged city.

Jet propulsion, then, is no newcomer to the ways of peace—and it is hardly newer to warfare. Everyone is familiar with the cruel V-1 "buzz bombs" and V-2 rockets which the Germans directed wantonly against England. But not many know that rockets were used as weapons of war more than 800 years ago. Back in the 12th century, when Genghis Khan and his Mongol hordes swept across Asia and Europe, the conquerers terrorized enemies in the field by sending huge rockets whizzing and bursting into their ranks. There is little evidence that the rockets—hardly more than monstrous firecrackers—caused any real damage, but they demoralized many a town's defenders.

A summer day in Texas, but this fat steel tank with a built-in furnace continues to apply sizzling heat to emulsified oil. Known as a volume heater, this equipment heats the oil and then sends it on to a "gun barrel" (right) where water settles out.

NEVER OUT OF SEASON

Oil field heaters help industry cope with many a problem. Winter or summer, you're likely to find them going full blast

WHEN summer comes, the average family man dismantles his heaters and stows them in the garage. Or if his home has central heat, he turns off the controls, puts out the pilot light, and sits tight until the next cold spell. It's not that way in an oil field. Heaters are run the year round, in hot weather as well as cold, and without them the production of oil and gas would be seriously handicapped. In the oil business, heaters are never out of season.

Because they help put the Indian sign on a number of common production problems, oil field heaters have become standard equipment on almost every producing lease. They come in a variety of designs, sizes and shapes. "In fact," says one engineer, "there are about as many different kinds of heaters as there are people."

Some stand thirty feet tall and gleam in the sun like giant silver thimbles. Others sit squat and bulbous, with the profile of huge metal pails topped by smokestacks. Still others have the look of slim horizontal cylinders. But perhaps the most curious thing about one of these heaters is this: No matter how hot the day, you'll probably find it going full blast, the throaty growl of its gas jets adding sound effects to its built-in heat wave.

Behind this perennial use of heaters is the persnickety nature of hydrocarbon molecules. These tiny links of hydrogen and carbon atoms can be as tempermental about the temperature as a baseball pitcher with a sore arm. Most of us have heard of the balky asphaltic oils which, mule-like, refuse to budge through a pipeline except under the urging of heat. But only in isolated fields will you find oil that viscous. Much more common is the use of heat in routing such gremlins as emulsified oil, frozen gas-line chokes and paraffin clogging. With the right kind of thermal therapy, these production headaches can be largely controlled.

By far the widest use of oil field heaters is in the treating of emulsified oil. Underground water has a habit of infiltrating a well bore and contending for space with the oil. It then proceeds to disprove the old adage that water and oil don't mix. As the two fluids rush headlong through the valves and chokes at the wellhead, an emulsion is formed. Small droplets of water take on an oily film and are dispersed in stable suspension throughout the oil. The older the field, the more water is likely to show up, and the more acute this problem.

Since most pipelines require oil to have less than one per cent water and basic sediment before being run, the emulsion must be broken. This permits the droplets of water to coalesce, or unite with each other, after which they will settle out into the treating tanks along with other entrapped contaminants such as mud, sand and salt.

There are several ways you can break an oil emulsion, but chemicals and heat are the two aids most commonly used. Sometimes only one or the other is called upon to do the job, but usually the two work together. The heat boosts the chemical reaction, pops the oily film around the droplets of water, and speeds up settling by lowering the oil's viscosity. Thus it is that the ubiquitous heaters help water and oil to wiggle out of their unnatural alliance.

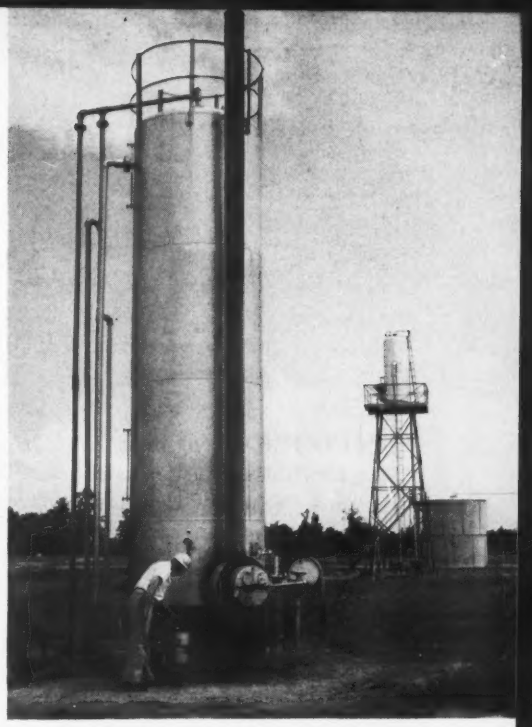
Back in the industry's early days, when crude was often stored in earthen pits, operators relied on dehydration methods not unlike those used in boiling down sorghum molasses. Like the molasses makers, the operators "cooked" the water out in open vats. They used long troughs, 100 to 200 feet long, the bottoms of which were crisscrossed with steam coils. As the oil flowed the length of these heated flumes, the water steamed out. There was one serious hitch: While they cooked off the water they cooked off some of the oil, too. Today, with modern heaters and enclosed treating tanks, practically none of the light ends are allowed to escape. The oil is heated and later cooled, permitting these light ends to condense and return to the oil.

In 1951, Humble's oil field heaters had a busy year. The Company treated 63 million barrels of its crude production for removal of water. Of this amount about 88 per cent was subjected to heat as part of the treatment. So efficient are today's methods that the cost ran to just a little more than half a cent a barrel.

Keeping gas-line chokes from freezing is another common use for heaters. Depending on the pressure of the gas, this freezing can take place at relatively high temperatures—in the seventies, say. The principle is the same as that which makes your automatic refrigerator work: Expanding gas absorbs heat and thereby produces cold.

Natural gas usually has water vapor in it. When the gas flows through a choke, it emerges at a lowered pressure. The gas gets an opportunity to expand, and the line will ice up unless the temperature of the gas is kept artificially high. In engineering terminology, this freezing process is described as the formation of hydrates. Hydrates are a frozen combination of water with hydrocarbons, and they have a much higher freezing point than does plain water. At 1000 pounds per square inch, for instance, hydrates will form if the temperature of the gas gets as low as 64 degrees Fahrenheit. At 2000 pounds, the freezing point is 72 degrees.

If a crude contains paraffin, heaters may be necessary to forestall troublesome congealing. As oil is produced, the gas that accompanies it expands and cools the fluid. This may cause the paraffin to congeal. When the fluid hits the oil and gas separator, the trouble begins for the oil and gas will not separate properly. Some of the oil may foam out with the gas. Some of the gas may remain entrained in the oil. Heaters are used to maintain a temperature high enough to facilitate gas separation.



Flow treater includes a heater and also separates gas and water from the oil.

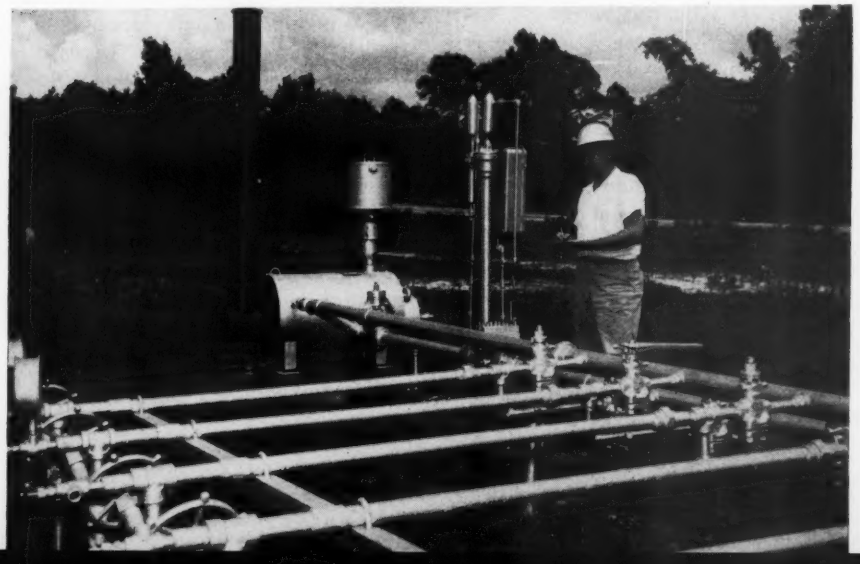
Heaters also help fight other paraffin problems. With many crudes, the paraffin will settle out of the oil into the stock tanks, causing a "paraffin bottom." This waxy sediment must be circulated back through a heater to keep it in solution. When paraffin accumulates in flow lines, heaters are again called into play. Hot water or oil is then circulated through the lines to melt the deposits and clean them out.

Generally speaking, oil field heaters fall into three main catagories: (1) the volume heater, (2) the indirect heater, and (3) the flow treater. All three are shown in the photographs on these pages.

Like the ceremonial fires of ancient Rome, which were kept burning night and day throughout the year, oil field heaters require expert care and supervision. This is provided by the lease pumpers, who make sure that all heaters are properly maintained and regulated.

As the nation's oil fields grow older, more and more water will be coming up with the oil. This means a gradually increasing work load for oil field heaters. Never out of season, the industry's heaters will continue to blaze away, winter and summer, rain or shine, as they help produce oil and gas for the wheels of America.

Midget heater shown here is one of the indirect type used to heat gas lines. This prevents clogging by hydrates, or frozen mixture of water and hydrocarbons.



Nineteen Employees Retire

Seven have more than 30 years' service; all but four have 24 years or more

NINETEEN long-time employees have retired since the last issue of THE HUMBLE WAY. All except four have 24 years' or more service with the Company. Seven of the employees have more than 30 years' service. Berry Jelks, porter at Beaumont, has the longest period with 35 years, having started to work with the Bonner Oil Company.

Humble Pipe Line Company—Ira L. McCamy, engineer at Satsuma, retired June 6 after almost 29 years' service. Mr. McCamy started to work for Humble at Satsuma as a laborer. Later he transferred to Lytle and returned to Satsuma. During retirement, he plans to raise a few cattle near Cypress, Texas, where he owns a home and 100 acres of land.

Knox Morgan, line rider-walker in the Foster District, retired June 1 after more than 30 years' service. All of his time with the Company has been spent as a line rider and truck driver in the North Texas and West Texas Divisions. He will live in Cisco during retirement.

Production Department—Daniel H. Edwards, lease pumper-gauger at McCamey, retired June 2 after more than 24 years' service. He joined the Company at Yates in the McCamey District as a laborer. All of his service has been spent on Humble's Smith lease in this district. His special interests include lodge and church work and local politics. He plans to buy the house in which he has lived while working for Humble and move it to Iraan where he will live.

Harvey E. Herron, lease pumper-gauger at Paradis District, retired April 18 after more than 17 years' service. He was employed as a painter. He has worked at New London, Luling, Flour Bluff, Government Wells, Stratton, North Crowley, and Paradis. His special interest is lodge work. During retirement, he plans to make his home in San Marcos, Texas.

Ray C. Hilbert, witness gauger at Gladewater, retired May 1 after more than 24 years' service. He was employed at Corsicana as a rotary helper. He later worked as a roustabout, pumper, watchman, truck driver, yardman, clerk, and witness gauger. His hobby is reading. He plans to live in Fairfield, Texas, on retiring.

Jesse A. Jackson, lease pumper-gauger at Goose Creek, retired June 13 after more than 25 years' service. Mr. Jackson joined Humble as a rotary helper at South Liberty; he later worked at Hull, Dayton, Barbers Hill, Moss Bluff, and Goose Creek. He intends to raise a garden and a few chickens.

Elza W. Reames, crum boss at Hawkins, retired May 6 after almost 27 years' service. He began work with Humble as a roustabout at Smackover, Arkansas; he also worked at Eldorado, Pyote, Conroe, Kilgore, and Tomball. Mr. Reames reports that he plans to do as little as he can get by with. The results will be "no dominoes, no hunting, no fishing, or raising of chickens." He will make his home in Houston.

Austin Wade, roustabout at Maurbro, retired May 3 after more than 25 years' service. He started to work for Humble as a laborer at Vernon. Later, he worked at Breckenridge, Albany, Chaney, Jenkins, South Bend, Kemper, McCamey, Longview, Kilgore, Arp, Conroe, Thompsons, Tomball, Anahuac, and Maurbro. His special interests include baseball, dominoes, and travel. On retirement, he expects to move to Graham, Texas and raise a garden and a few cattle.

Baytown Refinery—Eugene Q. Adams, boilermaker first, retired April 22 after more than 31 years' service. He started with Humble as a laborer. Although he worked some at Burkburnett, Texas, most of his service has been at the Refinery. His special interests are hunting and fishing. During retirement he will continue other employment.

Employees Recently Called to Military Service

AIR FORCE	
Bolin, David Lem	Production Accounting, Houston
Griffith, George E.	Baytown Refinery
Haley, Walter Scott	Stationery, Printing & Reproduction, Houston
MARINES	
Crowhurst, Pat Harris	Baytown Refinery
Martin, Billy Joe	Katy Gas Cycling Plant
ARMY	
Adams, James Harlin	Exploration-Geophysics, Texas
Broz, Frank Hubbert	Exploration-Geologic, Houston
Fife, George L., Jr.	Mallalieu Production
Hensarling, Jessie Tinsley	Production Accounting, Houston
Jones, Billy Ray	Friendswood Production
Morgan, Jimmy Lamar	Katy Gas Cycling Plant
Sissom, Billy Gene	Tomoconnor Gas Plant
NAVY	
Croft, Marvin Francis	Means Production
Ellisor, Alvin Lee	Exploration-Geophysics, Texas
Gardner, Jack Winston	Baytown Refinery
Percy, Calvin Greer	Exploration-Geophysics, Texas
Provance, William Reed	North Katy Production
Shelton, Sylvester Martin	Exploration Geophysics, Texas
Williams, Curtis Bennie	Maurbro Production

Paul C. Balke, Sr., helper first, retired May 23 after more than 26 years' service. All of his time with the Company has been at Baytown Refinery. Fishing and hunting are his hobbies. He will take care of his ranch at Sealy, Texas.

Walter F. Bauer, stillman first, retired May 16 after more than 30 years' service. He was first employed as a laborer. Most of his service has been in the Distillation Department, where he has worked in various capacities. He will continue to develop his hobbies, gardening and raising chickens at Algoa, Texas.

John B. Beaugh, supervisor, retired May 27 after more than 30 years' service. All of Mr. Beaugh's service with the Company has been spent at the Refinery except for about a month he worked at Raccoon Bend for the Production Department. He plans to continue in his hobbies, fishing and gardening, on retiring.

Walter B. James, pumper, retired June 3 after 23 years' service. He has worked in various capacities in the Pipe, Pumping and Gauging Departments. His special interest is cabinet making; he has a home workshop.

Ottis A. Parker, shift supervisor, retired April 7 after more than 25 years' service. All of his service has been at the Refinery. The departments he has worked for include, Asbestos, Crude Stills, Instrument, Gas Plant, and Light Ends.

Sales Department—Berry Jelks, porter at Beaumont, retired June 14 after more than 35 years' service. He started with the Bonner Oil Company as a laborer; later, he worked for Humble's Sales Department at Beaumont as a laborer, truck driver, warehouseman, and porter. He likes fishing and fox hunting, and he plans to raise a garden and pursue both fish and fox as his hobbies.

Douglas K. Lyles, senior bulk station clerk at the Houston Bulk Station, retired June 1 after more than 19 years' service. He joined Humble in Dayton, Texas as a cashier. He has also worked at Conroe. He likes woodworking as a hobby; and he maintains his own shop for this purpose. He plans to spend more time at his hobby during retirement.

Houston Office—Joseph R. Boyd, distribution clerk in Pipe Line Accounting, retired May 15 after more than 30 years' service with the Company. He started as a distribution checker: All of his work with Humble has been done in Pipe Line Accounting. His special interests include bowling, pool, fishing, hunting, and raising flowers. During retirement he will travel and continue his hobbies.

Ruby T. Coleman, janitress in Building Maintenance, retired May 14 after more than 19 years' service. All of her service with Humble has been in Building Maintenance. Her hobbies are growing flowers and doing fancywork. She will live with her daughter in California.

Hardin C. Maxwell, chief dispatcher in Crude Oil Dispatching, retired May 26 after more than 32 years' service. He started with the Company as a telegrapher and later worked as a dispatcher, assistant chief and chief dispatcher. All of his service has been in the Houston Office. Fishing and woodworking are his chief hobbies. He will enter a business of his own.

Corrections—These columns last issue mistakenly carried Irwin F. Pettey, superintendent at Mexia Pipe Line District before his death December 4, under retirements. Mr. Pettey, who had more than 31 years' service with the Company, was preparing to retire at the time of his death. The WAY extends sympathy to members of his family.

The retirement story on Frank Jousan, Jr., lease pumper-gauger, at Galveston Bay, was prematurely printed. Facts on his service with the Company will be reported in regular order at the time of his retirement in the future.

Deaths

Since the last issue of THE HUMBLE WAY, eleven active employees and three annuitants have died.

Active employees who have died are: John W. Alexander, Jr., 33, district clerk at Government Wells, on April 28; Sam H. Armstrong, 54, pumper at water station at Talco, on May 15; Phillip W. Harvey, 51, chief clerk at Pampa District, on June 6; Allen Linscombe, 61, lease pumper-gauger at Conroe, on May 23; John M. Nagle, 51, assistant buyer in the Purchasing Department in the Houston Office, on May 18; Worth E. Ross, 45, farm boss at Imogene, on June 6; Lee J. Slavens, 51, witness gauger in the London District, on April 10; Conard "R" Thomas, 54, pipeliner at Tomball, on April 30; Luther E. Taylor, 61, toolpusher at North Katy, on May 14; Barbara B. Voelcker, 27, telephone operator at the Houston Bulk Station, on May 7; Wilvey Welch, 55, electrician at Baytown Refinery, on April 23.

Annuitants: Carl B. Stolz, 66, janitor in Building Maintenance at the Houston Office before his retirement, died on May 6; Fletcher Thomas, 64, teamster at Baytown Refinery before his retirement, died on June 2; Calvin A. Williams, 80, district gauger at Cisco before his retirement, died April 3.

Key Training Assignments Made

Several one-year training assignments involving key positions in Production Department offices became effective June 1. These temporary assignments to positions of increased responsibility are part of Humble's Executive Development Program, which has been in effect in all departments of the Company for several years.

Bowman Thomas, Assistant Manager of the Production Department, is spending a year on loan in the offices of Standard Oil Company (N. J.), which will enable him to broaden his experiences in production matters.

J. H. Galloway, Assistant Division Superintendent of the West Texas Division, fills the Houston Office assignment of Assistant Manager of the Production Department in charge of unitization and proration problems.

J. S. Boldrick, Assistant Division Superintendent of the Louisiana Division, is in the Houston Office as Assistant Manager of the Production Department in charge of engineering and technical services.

R. J. Schilthuis, Assistant Superintendent of the Gas Division, is Assistant Manager of the Production Department in charge of operations.

By the way . . .

Ed Hamner, right, California Area Manager, studies map with assistant, John Bell.

HAMNER NAMED CALIFORNIA MANAGER

● Humble's California operations were placed under the supervision of the California Area office, with headquarters in Los Angeles, on June 1. In making the announcement President Hines H. Baker also announced the appointment of Ed J. Hamner as Area Manager; John S. Bell as assistant Area Manager; L. H. Byrd as area production superintendent; and Hunter Yarbrough as area geologist.

Mr. Baker explained that the organizational changes were brought about by the increasing importance of Humble operations in the state.

All drilling and producing operations, formerly handled from the Los Angeles offices, have also been established under two districts: Bakersfield district with J. M. Shepherd as superintendent; and Castaic Junction district with J. E. Cox as superintendent.

ANNUAL STOCKHOLDERS MEETING HELD ON MAY 12

● At the annual meeting of stockholders on May 12 in Houston, President Hines H. Baker pointed out that Humble has now become a company with a billion dollars in assets.

To replace production and make available additional supplies for consumers, the Company is planning to spend $245 million in 1952 for drilling wells and for other facilities, including anticipated dry hole costs of about $36 million.

Mr. Baker reviewed some of the Company's operations for the first four months of 1952 and said that demand for petroleum products is expected to be slightly higher this year than in 1951. Earnings will also be affected, however, by higher costs and federal tax rates which currently siphon off 52 per cent of taxable income.

Mr. Baker discussed the increasing importance of natural gas to the Company. Although Humble has a number of new contracts with industrial consumers in Texas for substantial quantities of gas over a period of years at prices better than the average now being realized, the price of gas is still too low in relation to other fuels. Gas should be allowed to find its true market value in competition with other fuels, without interference by government agencies.

Mr. Baker told stockholders that increased assumption of authority by the federal administration and bureaucratic controls are threats to individual freedom and to the future of business.

At the meeting, Humble stockholders re-elected all directors of the Company. At a subsequent meeting, the directors re-elected all officers.

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P. O. Box 2180, Houston 1, Texas

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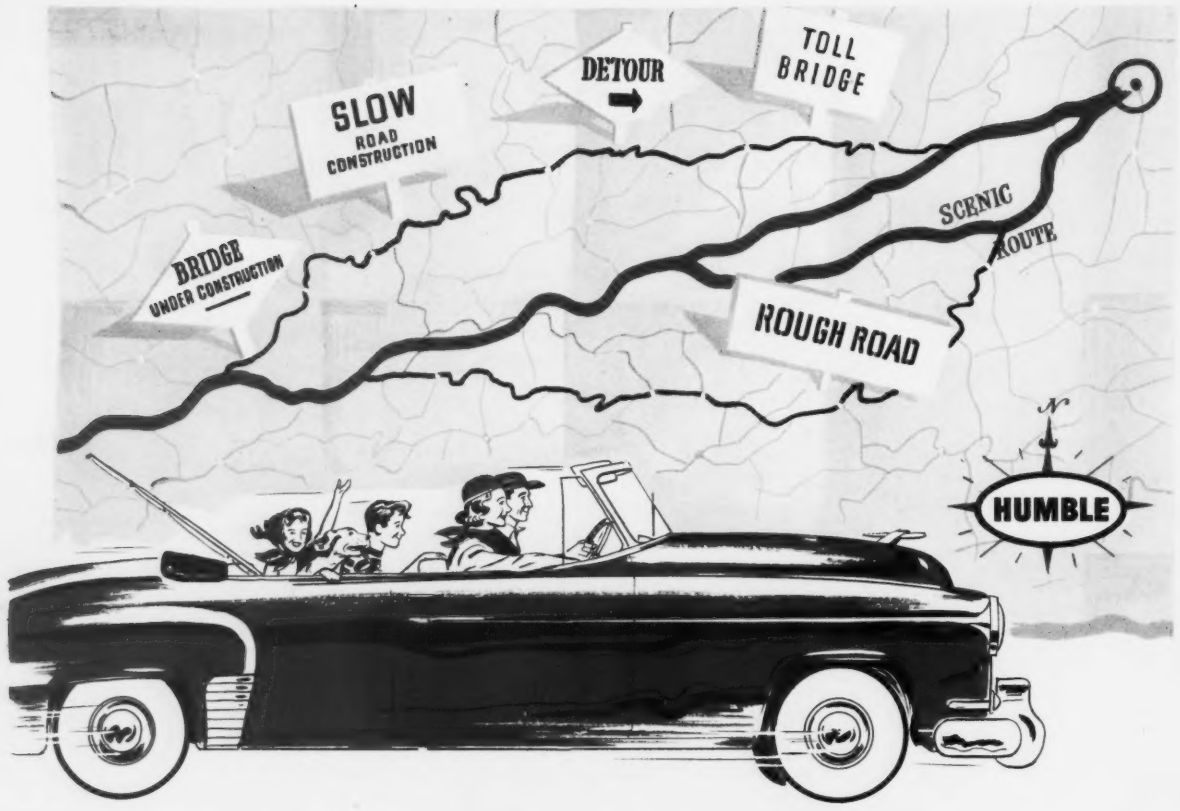

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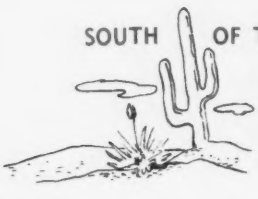

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